

AMENDMENTS TO THE CLAIMS:

1.(currently amended): A communication protocol processing unit formed by a multiprocessor, comprising:

a first processor for performing a process in real time on a stream of communication data[[.]] and renewing process required parameters; and

a second processor for receiving data to be processed together with the renewed process required parameters, which are transferred from the first processor, and performing a process in non-real time for the data by referring to the renewed process required parameters,

wherein the first processor transfers data paired with the renewed process required parameters to the second processor, and the second processor processes this data and renewed process required parameters providing a result to the first processor, thereby the second processor reduces the processing load of the first processor.

2.(currently amended): The communication protocol processing unit formed by a multiprocessor according to claim 1, wherein

the process required parameters are state transitional information, statistical information, or various setting information which is needed for a process excluding the communication data.

3.(currently amended): The communication protocol processing unit formed by a multiprocessor according to claim 1, further comprising:

a queue provided between the first and second processors, for storing a pair of the data to be processed and the renewed process required parameters.

4.(currently amended): The communication protocol processing unit formed by a multiprocessor according to claim 3, wherein

the first processor generates a processing demand signal for demanding the processing to the second processor,

before the first processor generates the processing demand signal, the communication data and process required parameters are first unconditionally transferred to the queue, and

the queue can independently display validity/invalidity of the transferred data to the queue according to presence or absence of the processing demand signal from the first processor.

5.(currently amended): A communication protocol processing unit formed by a multiprocessor comprising:

a plurality of first processors arranged in series to pipeline-process for performing a process in real time on a stream of communication data, and each of the plurality of first processors renewing process required parameters; and

a second processor for receiving data to be processed together with the renewed process required parameters, which are transferred from the plurality of first processors, and performing a process in non-real time for the data by referring to the renewed process required parameters,

wherein the first processor transfers data paired with the renewed process required parameters to the second processor, and the second processor processes this data and

renewed process required parameters providing a result to the first processor, thereby the second processor reduces the processing load of the first processor.

6.(currently amended): The communication protocol processing unit formed by a multiprocessor according to claim 5, further comprising a queue provided between the first and second processors for storing a pair of the data to be processed and the renewed process required parameters wherein

each of the plurality of first processors generates a processing demand for the second processor, and forward the processing demand and the renewed process required parameters to the latter stage of the first processor, and the last stage of the first processor collectively transfers the processing demands to the queue.

7.(currently amended): The communication protocol processing unit formed by a multiprocessor according to claim 5, further comprising:

a queue provided between the first and second processors for storing a pair of the data to be processed and the renewed process required parameters, wherein

each of the plurality of first processors generates a processing demand for the second processor, and further transfers the data to be processed and the renewed process required parameters to the queue unconditionally, and thereafter the queue can judge independently validity/invalidity of the data transferred to the queue according to presence or absence of the processing demands.

8.(currently amended): The communication protocol processing unit formed by a

multiprocessor according to claim 6, wherein

the processing demands and the renewed process required parameters are structured so as to be accumulated in each of the plurality of first processors.

9.(currently amended): The communication protocol processing unit formed by a multiprocessor according to claim 7, wherein the processing demands and the renewed process required parameters are structured so as to be accumulated in each of the plurality of first processors.

10.(previously amended): The communication protocol processing unit formed by a multiprocessor according to claim 3, wherein the data to be processed are directly transferred to the queue not via the first processor with reception of the communication data as an event.

11.(previously amended): A communication protocol processing unit formed by a multiprocessor according to claim 1, further comprising:

a queue for storing processing results of the second processor; and

a selection circuit for replacing the communication data on a stream with the processing results of the second processor, wherein

the first processor accesses to read the queue, and switches a selection route of the selection circuit to a side of the queue if the data are accumulated in the queue.

12.(previously amended): The communication protocol processing unit formed by a multiprocessor according to claim 11, further comprising:

a register indicating whether or not data are accumulated in the queue for storing the processing results of the second processor; and
a readout control circuit for reading out the data accumulated in the queue, wherein the first processor does not access the queue, and reads out a set status of the register, thereby recognizing a data accumulation of the queue, and wherein the readout control circuit is accessed when the data are accumulated, and reads out the data of the queue not via the first processor.

13.(currently amended): The communication protocol processing unit formed by a multiprocessor according to claim 6,

wherein a timing for forwarding the processing demands and the renewed process required parameters by each of the plurality of first processors is taken with next reception of the communication data as the event.

14.(previously added): The communication protocol processing unit formed by a multiprocessor according to claim 6, wherein the data to be processed are directly transferred to the queue not via the first processor with reception of the communication data as an event.

15.(previously added): The communication protocol processing unit formed by a multiprocessor according to claim 7, wherein the data to be processed are directly transferred to the queue not via the first processor with reception of the communication data as an event.